SWAMP
Surface Water
Ambient Monitoring
Program

SWAMP QUALITY ASSURANCE TEAM

What is it?

Quality Assurance (QA) is an integrated system of management activities that is intended to increase confidence in a product. The SWAMP QA system is managed by the program's QA Team (QAT). The QAT is staffed by the QA Research Group at Moss Landing Marine Laboratories. The QA Research Group is made up of six environmental scientists with experience in biology, ecology, chemistry, hydrology, toxicity testing, databases, and statistics. This expertise is used to create, maintain, and implement the following components of SWAMP's QA system:

- Surface Water Ambient Monitoring Program Quality Assurance Program Plan (QAPrP): This comprehensive planning document is created and maintained by the SWAMP QAT, and provides an overview of SWAMP's QA systems – including many of those described below. It is referenced by program participants, projects seeking SWAMP comparability, laboratories, field organizations, data managers, and end-users.

- Quality Assurance Project Plan (QAPP) Tools: While SWAMP maintains its own QAPrP, SWAMP-funded and SWAMP-comparable projects benefit from writing a project QAPP. To assist in this process, the SWAMP QAT provides a QAPP template and QAPP-creation software, as well as a checklist that may be used to review draft QAPPs.

- Quality Assurance Project Plan Review: To facilitate the QAPP-creation process for SWAMP-affiliated projects, the QAT performs comprehensive reviews of all SWAMP funded QAPPs, as well as many SWAMP-comparable QAPPs. These reviews ensure that each QAPP enters the approval process having met SWAMP and EPA requirements.

- Standard Operating Procedures (SOPs): These technical procedural documents ensure complete and consistent performance of recurring scientific processes. Because QA is an

integral part of any SOP, the QAT is closely involved in the production of any SWAMP-related SOP. The QAT also creates, maintains, and implements numerous process documents, which are simplified SOPs pertaining to recurring, yet non-technical, SWAMP protocols. While these documents are largely for internal use, they are made publically available in the interest of programmatic transparency.

- Measurement Quality Objectives (MQOs): Most programs ensure data consistency by mandating the use of specific laboratory and field methods. Unfortunately, this approach discourages analytical flexibility and innovation. In response, SWAMP has been designed to allow the use of any method that is capable of achieving programmatic MQOs. These MQOs are numerical performance goals that must be met by all SWAMP data contributors. Ultimately, data that has been subjected to the same MQOs may be considered usable for the same environmental decision.

- Reporting Limits (RLs): An RL is a minimum concentration of a pollutant that is of particular interest or relevance to a project or program. The QAT is currently working to establish RLs that will be referenced by all SWAMP data contributors. These program-specific RLs will ensure that analyses are addressing concentration ranges that are consistent and appropriate for SWAMP's data users.

- Laboratory Audits: The QAT periodically audits SWAMP-contracted analytical laboratories against the requirements of the QAPrP. This ensures consistency within and among the program's primary data generators.

- Corrective Actions: When deviations from the SWAMP QAPrP occur, it is important to correct them, but also to document and follow-up on those corrections. The QAT has created a formal process for corrective actions affecting SWAMP data. In it, all involved parties work with the QAT to describe the deviation, propose corrective actions, and evaluate the success of those corrective actions.

- Database Assessments: Just as it assesses SWAMP's contract laboratories, the QAT also audits data that is already being stored in the programmatic database. Typically, these

assessments involve a subset of data within the database, and seek to identify recurring failures or other noteworthy trends.

- Help Desk: The QAT staffs a phone- and email-based Help Desk to assist programs, projects, or other entities seeking comparability with SWAMP. The Help Desk provides guidance and resources pertaining to SWAMP QAPrP interpretation, QAPP-creation, and quality control (QC).

- Training: While the QAT has created numerous systems to simplify SWAMP QA, it is understood that much of the subject matter may still be unfamiliar or confusing. Consequently, the QAT supplements its other resources with frequent in-person and online training sessions, as well as a kickoff meeting at the initiation of new projects.

- Coordination: The QAT routinely meets with the SWAMP Roundtable, State Board QA Roundtable, SWAMP QA Workgroup, and other QA-related organizations. In addition, it frequently partners with State and federal government agencies (e.g., United States Geological Survey, Environmental Protection Agency, California Department of Fish and Game), non-profits (e.g., San Francisco Estuary Institute, Southern California Coastal Water Research Project), as well as the private sector. Each Regional Board, SWAMP-funded project, and environmental parameter group has a dedicated liaison within the QAT. Liaisons stay current with regional and project activities, technical advances, corrective actions, kickoff meetings, and QAPP reviews.

Why is it important?

There is a seemingly limitless amount of environmental data available in California. Unfortunately, this data cannot always be consolidated because it may be of unknown quality and comparability. The QAT creates and facilitates a framework within which all SWAMP contributors can generate data that is defensible. This enables the data user to compare data, which greatly increases the amount and scope of information available for their decision-making.

How will this information be used?

These SWAMP QA systems are relevant to all stages of environmental data collection – from project planning to data reporting. This means they are utilized by project management, field

organizations, laboratories, QA staff, data managers, and end-users. Further, when shared with partner programs, these same systems produce comparable data from many sources that are usable in comprehensive water quality assessments.

For more information click here.